THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States, issued on the first of each month from April to November, inclusive.

Volume 4 July 1, 1924 Number 4

BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING

R. C. TREHERNE

The Insect Pest Survey records with sincere grief the death of its most esteemed collaborator R. C. Treherne, Entomologist, in Charge of the Canadian Insect Pest Review, the official organ for Survey work in the Dominion. Mr. Treherne was largely responsible for the rapid development of this line of work in Canada and his contributions to our Bulletin in the form of "Outstanding Features for the month in Canada" were always received with interest by our readers. He laid the foundation of this work so firmly that the superstructure, the future development of Survey work in Canada, is assured.

INSECT PEST SURVEY BULLETIN

Vol. 4 July 1, 1924 No. 4

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR JUNE, 1924

Rather serious outbreaks of armyworms have already been reported from Illinois, southern Michigan, Indiana, and eastern Iowa, while a slight outbreak is recorded in Missouri.

Cutworm ravages are generally severe from New England and the Middle Atlantic States westward to North Dakota, Nebraska, Montana, and Kansas.

Grasshoppers are reported as injurious in Mississippi, Nebraska, Oklahoma, and Texas, as well as in some parts of Montana, Utah, and California. In the last State the damage is unusually severe.

Wireworms injury to many crops is reported from Massachusetts southward along the Atlantic Coast to New Jersey and also from North Dakota, South Dakota, Nebraska, Kansas, and Missouri.

The Hessian fly is rapidly increasing in central Ohio and parts of Indiana, and a serious condition with regard to this insect is reported from North Dakota, southeastern Nebraska, and eastern Kansas.

The chinch bug is not as serious as anticipated in Indiana and Illinois. There is still a serious infestation, however, in southwestern and north-central Missouri and along the southern border of Nebraska, westward to Furnas County, thence southward over eastern Kansas and northeastern Oklahoma.

The jointworm is reported as abundant in central and east-central Tennessee and central and southern Illinois, while the wheat strawworm injury is reported as severe in parts of Kansas.

The corn earworm is again epidemic as it was in 1921. Reports of serious damage to tomatoes, beans, cotton, and corn have already been received from the South Atlantic States, westward to Texas. In the South Atlantic States, including Alabama, the pest has assumed the armyworm habit and destroyed a very considerable amount of vetch.

Sprouting corn is being rather severely damaged by the larva of the pale-striped flea-beetle, and many reports of injury by the seed-corn maggot are being received from New York, westward to Iowa and Nebraska.

The rosy apple aphid is more abundant than usual in the New England States, south to New York and westward to Missouri.

The tent caterpillar is appearing in serious numbers in the New England and the Middle Atlantic States, southward to Maryland.

The rose chafer is reported as very numerous in New England and a serious outbreak is occurring in southwestern Indiana and the greater part of Tennessee.

Brood XXIII of the periodical cicada is appearing over most of its charted range.

The boll weevil is reported as becoming increasingly prevalent in Georgia. It is also reported from South Carolina, Oklahoma, Texas, and Mississippi.

The tomato suck-fly is extending its range northeastwardly in Texas.

An interesting application of the aphidozer to survey work is given under the items on the pea aphid.

OUTSTANDING ENTOMOLOGICAL FEATURES FOR CANADA FOR JUNE, 1924.

The cottony maple scale is reported to be spreading rapidly in the Greater Vancouver District, B. C., affecting a variety of shade and fruit trees including maple, chestnut, pear, apple, plum, and cherry.

Tent caterpillars, of which the forest tent caterpillar, Malacosoma disstria Hbn., is the most injurious, are causing great damage in British Columbia from Armstrong north to Salmon Arm where nearly all strawberry patches, as well as raspberries have been devoured, and many fruit trees defoliated. The forest tent caterpillars have completely devoured the wild bush and are migrating into all cultivated crops.

Bruce's measuring worm, Rachela bruceata Hulst, was infesting wild bushes and apple trees around Armstrong, B. C., in immense numbers in early May. Some were full grown by May 15.

A very serious grasshopper outbreak is developing over the whole of the dry interior of British Columbia. Melanoplus spp. are mainly responsible in the Okanagan Valley where great loss is being experienced in the vegetable and tomato fields, while Camnula pellucida Scud. is doing great damage in the Nicola-Kamloops area.

The northern sedge caterpillar, Ctenucha virginica Charp., has appeared in outbreak form in bogs and swamps in the locality of Treesbank, Manitoba. The larvae, which are present in countless numbers, usually feed on various sedges, but will readily turn to grasses, especially brome grass.

Garden springtails have been causing trouble at Dartmouth, N.S., where they were present in considerable numbers during the latter part of May, attacking young spinach seedlings.

The satin moth has been very materially reduced in numbers in the Vancouver district, B.C., doubtless owing to winter killing. An examination of several stands of poplar revealed the larvae to be almost entirely absent from Lombardy poplar, and only in sufficient numbers in white poplar to cause about 25 per cent defoliation.

An extensive and destructive outbreak of the eastern spruce bark-beetle, is reported at Frater, Ont.

MISCELLANEOUS FEEDERS

ARMYWORM (Cirphis unipuncta Haw.)

Michigan

R. H. Pettit (June 24): The first armyworms appeared today and they are working in corn in the southern part of the State. The weather has been ideal for an armyworm outbreak and I am expecting more in the immediate future.

Indiana

W. H. Larrimer through W. R. Walton (June 17): On my way back from Ohio I stopped off at Knightstown, Ind., to look over the chinch-bug-resistant corn experiment and while examining the wheat fields for chinch bugs I noticed a very moderate infestation of armyworms. Since my return I have found this pest present in various kinds of crops. In some cases considerable damage is being done to garden crops, particularly lettuce. The predominant species is C. unipuncta although there are quite a number of the variegated cutworms, Lycophotia margaritosa Haw. The county agents of this section are fairly familiar with the control of these armyworms and, consequently, I do not anticipate any serious developments. I believe already in one or two cases control measures have been started. The worms vary in size from very small to mature. This particular season being rather favorable for cutworms in general, it is not surprising that we have these local outbreaks.

J. J. Davis (June 21): Moths were common at Lafayette during May. The first report of injury came from Gibson County, in the southwest corner of the State, June 4. This was followed by reports from other counties to the north. The past week (June 16-20) they have been common in Tippecanoe, Benton, White, Carroll, Rush, Montgomery, and Porter Counties. The injury has been conspicuous in cornfields which were in timothy last year, plowed for corn this spring, and because of the unfavorable weather for cultivating, the timothy and weeds grew up abundantly in the wetter parts of the field. This offered good conditions for egg laying by the moth. The armyworms are, therefore, scattered more or less generally through such cornfields and they are of all sizes. There is also an abundance of armyworms in timothy and other grassy fields and we anticipate more trouble if they migrate from such fields to corn and small grain, as they no doubt will do in some cases.

Illinois

Henry Schunerelpfenning (June 12): There is an infestation of armyworms in my meadow land at Manito.

C. C. Compton (June 14): Armyworms are causing severe damage to grass and corn in central LaSalle County.

W. P. Flint (June 18): There are general scattered outbreaks of armyworms from southern to north-central Illinois. Worms are appearing mainly in timothy, oats, and wheat. Moths are still abundant. Parasites from examinations to date are very scarce.

Iowa — Carl J. Drake (June 26): Telegram. Armyworms are doing great damage in eastern Iowa.

Missouri — L. Haseman (June 20): A few scattered complaints have been received, showing this pest to be present though not especially serious.

CUTWORMS (Noctuidae)

Maine — E. M. Patch (June 13): At Mapleton on June 13, 2½ acres of oats were pretty well cut down by Agrotis ypsilon Rott. Larvae at that date were about 1/2 to 3/4 inch. A 15-acre grain field is evidently threatened. Oats are 4 inches high. Crows are feeding greedily night and morning on the cutworms but they are not touching the grain.

Massachusetts — A. I. Bourne (June 24): Cutworms are much more prevalent and doing more damage throughout the State than for the last few years. They are particularly bad here in the Connecticut Valley in tobacco fields; both the subsurface injury and that done by the climbing species are unusually severe on young newly-set plants. The attack is so severe as to be causing very general anxiety on the part of growers.

New York — A. B. Buchholz (June 14): From the damage I have seen in Columbia County to garden and field crops, and from the reports I have received, I would judge that there is what might be called an epidemic of cutworms.

Michigan — R. H. Pettit (June 19): Cutworms are worse than usual.

Ohio — H. A. Gossard (June 20): Cutworms have been very abundant, but since the weeds and succulent plants of all kinds have been likewise abundant they have had plenty of forage and have bothered garden plants less than in some years when they were not so plentiful.

Indiana and Ohio — J. J. Davis (June 21): The Holland-St. Louis Sugar Company reports extensive injury to sugar beets on June 14 at Auburn, Ind., and Rockford, Ohio, and other parts of northern Indiana. Observations indicate injury in fields which were in red clover and timothy sod last year. Where fields were in alfalfa and sweet clover no losses have been observed. Cutworms were also reported from Elkhart June 3, cutting off grape shoots at the ground.

North Dakota — R. L. Webster (June 13): There is damage on clover and timothy sod, spring plowed and seeded to flax in Cass and Richland Counties. This is not the pale western cutworm. The area involved is 80 per cent on one field in Cass County.

Nebraska — M. H. Swenk (May 15-June 15): Some reports of injury to young corn by cutworms have been received but, except for an area in the sandy soil of Holt County, injury by cutworms to corn was, on the whole, less than normal.

Kansas — J. W. McCulloch (May 31): The county agent of Labette County reports worms present in large numbers in local areas in alfalfa fields and gardens.

Montana — W. C. Cook (June 21): The first outbreak of Chorizagrotis auxiliari Grote since 1931 is in Judith Basin County, with abundance above normal. Several hundred acres of wheat were damaged.

GRASSHOPPERS (Acrididae)

Delaware — C. O. Houghton (June): Grasshoppers have appeared only in very small numbers so far this year at Newark. I believe that the very dry season of last year, coupled with the very wet spring we have just had, has had an important bearing on this. The species is Melanoplus femur-rubrum DeG.

Mississippi — R. W. Harned (June 20): Grasshoppers, specimens of which have not been received, have been reported as seriously injuring soybeans in the vicinity of Indianola.

Nebraska — M. H. Swenk (May 15-June 15): Grasshoppers were reported doing some injury in alfalfa fields in Hitchcock County during the second week in June but, on the whole, these insects seem much less numerous than for several years past at this time of the year.

Oklahoma — E. E. Scholl (June 2 to 7): Melanoplus differentialis Thos. is attacking alfalfa, cotton, and sweet clover in Carter, Johnston, Logan, Jefferson, Cotton, Love, Tillman, Kingfisher, and Ellis Counties. The abundance is greater than in an average year and there are more than last month. (June 9): The grasshopper campaign in this State is in full swing. The insects are very numerous in the southwestern part of the State with two outbreaks of minor importance in Logan and Ellis Counties. (June 23): The grasshopper situation has increased in seriousness and in the area infested. The entire southwestern part of the State is now covered by grasshoppers and in many places more than 50 per cent of the cotton and alfalfa has been destroyed. In counties where the agents began control work about 10 days ago the infestations have been very much reduced. The main drawback has been that good fresh poison was not available in all infested areas.

Texas — F. L. Thomas (June 4): The grasshopper outbreak extends from Childress County, in the northern part of the State, southwest through Gaines, Reeves, Schleicher, and Frio Counties, thence eastward through DeWitt, Waller, and Anderson Counties to Franklin and Delta Counties in the northeastern part of the State. (June 20): Practically all of the complaints are the result of injury to cotton, but some injury has occurred on corn. A few cotton fields have been replanted. Grasshoppers are increasing in the north and eastern sections of the infested area and decreasing in the southwestern section. R. R. Reppert, Extension Entomologist, has done a large amount of work in demonstrating to groups of county agents the mixing and distribution of poisoned bran mash. White arsenic has been bought by the carload.

Montana

Robert L. Shotwell (May 26): From several sections in the northern part of Chouteau County Melanoplus atlanis Riley has been reported as having taken this year's crop. Damage to this year's wheat crop has already been reported from several townships in Liberty County. Last year's stubble fields are proving to be a menace to adjacent wheat fields. These grasshoppers are hatching in considerable numbers in Hill County but no serious damage has been reported as yet. Though not as numerous as M. atlanis, still Melanoplus femur-rubrum are hatching in sufficient numbers in Hill County to be a serious pest.

J. R. Parker (June 24): Taking the State as a whole, grasshoppers are nowhere nearly as abundant as in 1923. In certain areas, however, they are still very numerous and would do great damage were it not for strenuous campaigns put on in the infested counties. The most heavily infested Counties are Teton and Pondera, which are in the central part of the State just east of the Divide. The southern ends of Glacier and Toole Counties have scattered areas as well as Chouteau and Hill Counties. These areas are west of the most heavily infested areas of last year and it seems quite certain that they are the result of migrating swarms of hoppers which left the infested areas last year and flew West. Another infested area lies just west of the Continental Divide in the Counties of Granite, Powell, and Deerlodge. The damage done by grasshoppers in this State thus far this season is very slight. The campaigns in the infested localities have been very successful.

Utah

Geo. F. Knowlton (June 18): Grasshoppers are again becoming destructive west of Smithfield and Amalga; some farmers are using poisoned bait to stop their migrations. Last year in this section several tons of poisoned bait were used, but in places where it was not used many fields of grain were stripped of leaves by the time the grain was headed out.

I. M. Hawley (June 23): Grasshoppers are doing considerable damage in several parts of the State, particularly in Utah, Millard, and Cache Counties. On the whole, they are more abundant than last year.

California

C. M. Packard (June 16): This is an unusually bad grasshopper year. Swarms of hoppers have appeared in many localities not usually suffering serious damage. They have developed several weeks earlier than usual. M. devastator Scud. already is largely in the adult stage on dry lands. The unusual outbreak is probably due to mild, dry winter followed by early spring. They are attacking fruits, vineyards, grains, and alfalfa in the foothills and valleys over the whole State.

WHITE GRUBS (Phyllophaga spp.)

Delaware

C. O. Houghton (June 24): Comparatively few "June beetles" have appeared to date, with the exception of the large flight of P. tristis, noted in a previous report.

Missouri

L. Haseman (June 20): White grubs have never been so abundant and trees are still roaring with the beetles. Several species are present.

WIREWORMS (Elateridae)

Massachusetts — A. I. Bourne (June 24): Tobacco growers, as well as onion growers, are very seriously threatened by an unusual abundance of wireworms. This does not seem to be limited to any particular region or type of soil but, as nearly as our observations and reports indicate, is a very general condition this season up and down the Valley.

New York — D. D. Ward (June 14): Serious wireworm injury to corn and potatoes is being reported from many parts of Onondaga County, particularly on the lighter soils. In many cases corn plantings have been almos completely destroyed. As many as 10 wireworms have been found in a single hill.

New Jersey — Harry Sally (June 10): Insects seriously damaging sweet corn, as many as 11 larvae being found in a hill. These insects are found on land that was not in corn last year. (The larva accompanying this material was Limonius sp. - J. A. H.)

Missouri — L. Haseman (June 20): Wireworms have been especially abundant this year and have done some damage to corn.

North Dakota — C. N. Ainslie (May 29): Much stock is raised in this section (Sanger) of the State and wireworms threaten to cripple the industry by attacking the corn crop in great numbers. It is said to be a new pest in these parts.

South Dakota — A. L. Ford and H. C. Severin (June 10): Wireworms of undetermined species are attacking corn at Mission Hill and Beresford.

Nebraska — M. H. Swenk (May 15-June 15): Some injury to the planted seed-corn by wireworms was reported, but surprisingly little, considering the backward character of the spring.

Kansas — J. W. McColloch (June 15): Wireworms have been especially bad in cornfields at Manhattan and Irving. Counts made in a number of fields at Manhattan show that the stand has been reduced 10 per cent. Most of the larvae were Melānotus sp.

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Ohio — T. H. Parks (June 23): Although very few Hessian flies hibernated in the wheat fields of central counties, the insect is making a rapid come-back. This remarkable rise in numbers is apparently due to numerous rains during the hatching period. It rained at Columbus on 28 days during May. The origin of the ovipositing females must have been from old stubble and a small amount of volunteer wheat in the hay fields. The Wheat Insect Survey starting June 30 will point out over how many counties this increase in the fly has occurred.

Michigan — R. H. Pettit (June 19): An examination in the fields over a small part of the State has not revealed any quantity of the Hessian fly thus far.

Indiana — J. J. Davis (June 21): Reports indicate that the Hessian fly is increasing in some localities, apparently localities where some wheat was sown early last fall. Have been unable to make a survey to determine the exact situation.

Illinois — W. P. Flint (June 18): The spring brood of the Hessian fly has appeared in moderate numbers with occasional fields showing 20 to 30 per cent infestation.

North Dakota — C. N. Ainslie (May 29): The abnormally cold spring has delayed the emergence of the adults and now, when the wheat is growing nicely, the flies are placing third eggs. No fields appear to have escaped and in many fields nearly every plant carries from 1 to 10 eggs or even more. The situation is certainly serious.

Nebraska — M. H. Swenk (May 15-June 15): By the last week in May the spring brood had mostly developed to the mature maggot or puparium condition. In the latter stage they largely remained during the first half of June, comparatively few having emerged as adults to form a second spring brood. Nevertheless, the fly, in connection with the unfavorable weather conditions, has worked very great injury to the winter wheat crop of southeastern Nebraska during the present spring, and especially in those counties where late sowing of the wheat was not generally practiced last fall. There are large numbers of small dead stems, and the stools usually show weak vitality where the fly is present, which is in about 20 per cent of the acreage. The center of more serious injury eastwardly seems to be in Dodge, Saunders, Butler, Polk, Platte, Hamilton, Fillmore, Saline, and Jefferson Counties. No organized late sowing movement was conducted in any of these counties, except in Saunders and Fillmore Counties, last fall and in these two counties only a comparatively small percentage of the farmers awaited the fly-free date. The infestation in the early sown fields of these nine counties involves from 9 to 22 per cent of the well-developed stems standing at this time, with an average of from 1 to 3 puparia to the affected stem. The dead smaller early spring growth contains at this time large numbers of puparia which have not as yet given forth their flies. This indicates the possibility of a very heavy midsummer brood. The western area of infestation previously mentioned, extending from Harlan to Redwillow County and north into Frontier, Gosper, and Phelps Counties and southwestern Dawson County, is in general similarly affected.

Kansas — J. W. McColloch (June 18): There is a general infestation over the State, which is severe in some sections. Heavy infestations are known to occur in Riley, Morris, Clay, and Decatur Counties. The dry weather in early spring reduced the infestation in the western part of the State. Conditions the last of May and in June were favorable for the fly. (June 19): The Hessian fly situation is not as alarming as we had feared earlier in the year. There is a

general infestation over all the wheat growing section of the State, in some areas reaching a serious proportion. The situation is such that, unless active preventive measures are taken during the summer, we can expect a large amount of damage to fall sown wheat. (June 22) Clumps of wheat received from Oakley had 10 per cent of the stems infested with the Hessian fly.

CHINCH BUG (Blissus leucopterus Say)

Indiana — J. J. Davis (June 21): Because of the excessive rainfall and other unfavorable conditions we anticipate less trouble this year from the chinch bug, at least from the first generation.

Illinois — W. P. Flint (June 18): The rains and cold weather of May have been decidedly unfavorable to the development of this insect. Scattering fields are still found throughout the area infested last year where enough bugs are present to cause serious losses to adjoining crops. It is certain the damage from this insect will not be as heavy as that of last year in most of the areas infested in the State.

Missouri — L. Haseman (June 20): The chinch bug is reported as most threatening in counties of southwestern and west-central Missouri. Heavy rains have influenced the young brood but in central Missouri young red nymphs were appearing June 14. We expect serious trouble to start in the next two weeks if it turns dry. We are receiving many inquiries about barriers and the use of calcium cyanide as a gas barrier.

Nebraska — M. H. Swenk (May 15-June 15): The small grain fields of Richardson, Pawnee, Johnson, Gage, southern Lancaster, Saline, and Jefferson Counties have developed, during the past six weeks, a rather heavy infestation with the chinch bug and at this date many fields show evidences of injury. Pawnee County probably shows the heaviest infestation of this block of counties, at the present time. The infestation is general, however, in the counties along the southern border of the State, west to Furnas County, the bugs becoming gradually more numerous from Jefferson County to Furnas County. It is expected that serious injury will take place in the corn through this entire area after harvest, except in those fields where barrier protections are maintained.

Kansas — J. W. McColloch (June 19): The chinch bug situation is especially alarming, since the bugs are distributed generally throughout the wheat fields of the eastern half of the State. While egg-laying and hatching were delayed by the cool weather early in the spring, there was very little mortality and the young bugs are very abundant in most fields. Fifty per cent of the eggs are parasitized. Fungus is killing old bugs but is not affecting immature stages. Wheat is ripening very fast at the present time and the migration from wheat fields has begun in this State. Undoubtedly there will be severe injury to corn in the next week or two.

Oklahoma — E. E. Scholl (June 23): It having been impossible to burn chinch-bug hibernating quarters last fall, this insect carried over very successfully and is now beginning to do very destructive work to row crops in the northeastern part of the State.

GREATER WHEAT-STEM MAGGOT (Meromyza americana Fitch)

Missouri — L. Haseman (June 20): The wheat-stem maggot is reported from the northwestern part of the State as serious in some fields.

WHEAT JOINTWORM (Harmolita tritici Fitch)

Tennessee — G. M. Bentley (June 17): The wheat jointworm is doing considerable damage to wheat in Greene, Jefferson, and Robertson Counties.

Illinois — W. P. Flint (June 18): This insect is very abundant in central and southern Illinois, especially in the western part of the State. S. C. Chandler recently conducted a survey in southern Illinois which showed an average infestation of a little over 21 per cent with occasional fields showing 30 to 40 per cent infestation, an average of 30 per cent of the straw fallen. The outbreak is more general than any which has occurred in Illinois in recent years.

WHEAT STRAWWORM (Harmolita grandis Riley)

Kansas — J. W. McColloch (June 22): Clumps of wheat received from Tribune show 40 per cent of the stems infested. Wheat from Oakley had 50 per cent of the stems infested.

CORN

EUROPEAN CORN BORER (Pyrausta nubilalis Huebn.)

Ohio — H. A. Gossard (June 12): On this date none of the larvae of this borer had pupated at the laboratory at Oak Harbor and, evidently, the brood for 1924 is going to appear a week or ten days later than it did in the northeastern part of the State in 1923.

CORN EARWORM (Heliothis obsoleta Fab.)

South Carolina — A. F. Conradi (May 22): The corn earworm has done about 60 per cent damage to the early tomato crop at Beaufort.

Georgia — J. H. Pressley (May 28): In the vetch field at Fort Valley this pest had taken on the habits of the armyworm.

W. D. Hillis (May 31): This pest was mistaken for the armyworm at Statesboro. (The summer has been cool and backward so as to hinder the development of parasites. - J. D. More.)

H. B. Ralls and J. D. More (June 3): The outbreak at Ashburn was first reported as that of the armyworm. They were so worried in this section that I made a personal trip and found this to be the pest. Trenching and poisoning had been already resorted to. The season was backward and cool and had hindered the development of parasites. Several specimens showed that they were parasitized. Also reported as attacking tomato on June 2 at Pearson, Pitts, and Rochelle, in all cases doing considerable damage.

Georgia — O. I. Snapp (June 20): This pest has been unusually abundant in middle Georgia this year, attacking corn and vetch. In the case of vetch they have assumed armyworm habits and trenches had to be dug around the fields in order to prevent their progress and hold them in check.

Alabama — J. M. Robinson (June 25): The corn earworm has caused some damage to cotton and corn, due to the fact that vetch was not turned under sufficiently early to destroy the developing larvae.

Mississippi — R. W. Harned (May 27): This pest has been seriously damaging large fields of garden beans in the vicinity of Pascagoula, Jackson County. One inspector reports that at least 75 per cent of the beans are infested and that practically every bean pod shows some indication of the work of these worms. These insects first attracted attention about May 15. Individual farmers will lose from $100 to $400 because of these insects.

Texas — F. L. Thomas (June 20): There has been extensive infestation on corn and fear is being felt for cotton in Grayson County.

STALK BORER (Papaipema nitela Guen.)

Massachusetts — A. I. Bourne (June 24): The stalk borer is the subject of several reports, its work being on young tomato plants and small corn plants.

Indiana — J. J. Davis (June 21): Reported injuring tomato plants at Evansville June 19. Specimens not over one-third grown.

Kansas — J. W. McColloch (June 18): May 31 worms were killing all corn in some fields in Harper County. June 16 severe injury to corn was reported from Marshall County and to potatoes from McPherson County.

WEBWORMS (Crambidae)

Ohio — H. A. Gossard (June 20): Crambus caliginosellus Clem. was received from Ohio June 3, where it was attacking young corn.

Indiana — J. J. Davis (June 21): Considerable damage is reported to corn by webworms in a field near Delphi on June 20. This field was in sod last year.

BILLBUGS (Sphenophorus spp.)

Missouri — L. Haseman (June 20): A small species of billbug has been reported by a number of growers in the central part of the State.

Kansas — J. W. McColloch (June 10): Maize billbugs, Sphenophorus maidis Chittenden, were reported numerous in fields at Marion, most of the injury being on bottom land. (June 12): Sphenophorus callosus Oliv. has destroyed one-half of the corn in a field near Olathe.

SUGAR-CANE BEETLE (Euetheola rugiceps Lec.)

Tennessee — G. M. Bentley (June 17): Several reports have been received of adult injury to growing corn caused by the carrot beetle or sugar-cane beetle.

Mississippi — R. W. Harned (June 20): Complaints in regard to the rough-headed corn stalk-beetle have been received from Montgomery, Neshoba, Yazoo, Carroll, and Oktibbeha Counties.

BANDED FLEA-BEETLE (Systena taeniata Say)

Indiana — J. J. Davis (May 24): Received May 24 to June 5, from Veedersburg and west to Frankfort, Fairmount, and Fort Wayne on the north and east. The larvae burrowed into the roots and developing shoot, before and after it appeared above ground. All records show it to be common only in fields which were in weedy sod or other weedy ground last fall. The most severe injury is in spring plowed land. The species has not been positively identified as it has not been reared.

Illinois — C. C. Compton (June 10): The larvae of the pale-striped flea-beetle has severely injured sprouting corn in the field in Kendall and LaSalle Counties. Replanting was necessary in fields totaling 68 acres. (June 18): The larva of this insect has been found injuring corn in a number of fields in the central and northern parts of the State.

SEED-CORN MAGGOT (Hylemyia cilicrura Rond.)

New York — C. R. Crosby (June 17): At Auburn 14 acres of corn were so badly injured by Phorbia fusciceps that it will be necessary to plow it up and replant.

Ohio — T. H. Parks (June 23): Damage to corn occurred generally from this pest, which destroyed germinating kernels of corn during May. Cold, wet weather greatly delayed germination and growth of the seedling.

Michigan — R. H. Pettit (June 19): We are suffering from an attack of the bean maggot, both in beans and in sprouting corn. While this attack is not nearly so serious as the one a few years ago yet it is fairly common. So far as I can determine at this stage of the game, men who seeded their land early, who seeded at a depth of one-half inch, and who used rotted manure have escaped. Of course, in the case of alfalfa worse roots keep the maggot so much longer. Fall plowing is necessary.

Indiana — J. J. Davis (May 28): A large number of inquiries relative to injury to corn, together with specimens of the seed-corn maggot, have been received from Columbus and Veedersburg. The cold, wet season has no doubt been partly responsible for the abundance of this insect. Old seed has been partly responsible in some instances. (June 21): It was common in planted corn seed the past month, reports coming in from May 26 to June 14 and the infested area ranging from Columbus on the south, Veedersburg and Fowler on the west, east and north to Winamac and Rochester. The cold, wet spring which delayed germination was largely responsible. In some cases it was noticeable that old corn was more severely attacked than last year's corn.

Illinois — W. P. Flint (June 18): Considerable injury has been occasioned by this insect throughout the central and northern parts of the State.

Iowa — Carl J. Drake (May 28): The seed-corn maggot has destroyed a field of corn and beans near Newton, Jasper County. In the lima beans as many as 76 maggots were found in a single bean. In corn the number varies from 2 or 3 to a dozen maggots per kernel. The cold weather has been unfavorable for the development of the corn and very favorable for the feeding of the maggots in the kernels.

Nebraska — M. H. Swenk (May 15-June 15): During the last week in May reports of injury to planted seed corn by the seed-corn maggot were received from Cedar, Dakota, Saunders, Thayer, and other Counties lying east of the 98th meridian. This injury was, no doubt, induced by the very cool, backward spring, which greatly slowed up the germination of the planted corn.

CORN ROOT-APHID (Aphis maidi-radicis Forbes)

Nebraska — M. H. Swenk (May 15-June 15): During the last half of May reports were received indicating a considerable prevalence of the corn root-aphid in Franklin and Harlan Counties, attended by a considerable thinning out of the stand in many cornfields because of this attack.

ALFALFA AND CLOVER

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

Utah — I. M. Hawley (June 23): The alfalfa weevil is appearing again in injurious numbers in Salt Lake, Millard, and Utah Counties and in some other places along the southern limit of the insect's spread. It is more abundant over its entire range than it has been at any time during the last three years.

MORMON CRICKET (Anabrus simplex Hald.)

Wyoming — F. W. Boyd (May 28): Nymphs in the third and fourth instars are doing considerable damage to young alfalfa plants in Hot Springs County. Alfalfa 10 to 12 inches is stripped bare of leaves. The county is organized and is having very good results with poisoned bran mash.

Idaho and Utah — I. M. Hawley (June 23): The Mormon or army cricket is again abundant in Franklin (southern Idaho) and in the Uinta Basin, Utah. The insects are nearly full grown and migrating at the present time.

GARDEN WEBWORM (Loxostege similalis Guen.)

Iowa — Carl J. Drake (May 28): The adult of the garden webworm has been taken in Page and Mills Counties this spring (May 13).

Nebraska — M. H. Swenk (May 15-June 15): During the first week in June the first brood of the year of the alfalfa or garden webworm put in its appearance in the alfalfa fields and was reported doing obvious injury in Washington and Madison Counties in a few fields.

GREEN CLOVERWORM (Plathypena scabra Fab.)

Mississippi — R. W. Harned (June 20): An insect that is probably the green cloverworm has been reported as seriously damaging alfalfa in Bolivar County.

SIX-SPOTTED LEAFHOPPER (Cicadula sexnotata Fab.)

Nebraska — M. H. Swenk (May 15-June 15): During the third week in May the six-spotted leafhopper was reported badly injuring alfalfa, especially young alfalfa that had been sown with oats, all through Thurston County, and also as injuring barley in Hamilton County. These injuries apparently ceased, however, before the end of May.

PEA APHID (Illinoia pisi Kalt.)

Michigan — R. H. Pettit (June 3): I am informed that the alfalfa fields were found to be infested on the 28th of May with the green pea louse. The weather here in Michigan has been cold and wet almost continuously up to the present time.

Utah — Geo. F. Knowlton (June 10): The pea aphid is numerous in most alfalfa fields examined in Logan and surrounding territory but the damage is not noticeable.

BUMBLEBEES

Ohio — H. A. Gossard (June 20): Our agronomists report that bumblebees are very scarce this season and that the first cutting of clover can hardly be expected to develop a normal supply of seed. It is also possible that they will not have replenished their number sufficiently by midsummer or fall to insure a seed crop from the second cutting of clover. The excessive rainfall is supposed to have drowned out many of the nests.

CLOVER-LEAF WEEVIL (Hypera punctata Fab.)

Ohio — H. A. Gossard (May 29): The clover-leaf weevil was received from Brooklyn Station May 29, where it was reported to be very numerous on a field of plowed sod which was to be planted to corn.

SOYBEAN

A BLISTER BEETLE (Epicauta lemniscata Fab.)

Louisiana — J. W. Ingram (June 4): Striped blister beetles appeared in large numbers during the first days of the month and began feeding on the young soybean plants around Crowley. In some fields the young plants were completely defoliated.

COWPEA

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

Georgia — O. I. Snapp (June 10): This pest is very abundant and injurious in Hancock County this year on cowpeas.

SORGHUM

KAFIR ANT (Solenopsis molesta Say)

Kansas — J. W. McColloch (June 10): At Eskridge it has been necessary to replant sorghums three times because of this insect. Damage has also been reported from Eureka.

VETCH

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Maryland — P. D. Sanders: An outbreak has occurred on the Eastern Shore of this State.

South Carolina — J. A. Berly (June 12): Attacking vetch at Union. This is the first reported outbreak we have received. No serious damage was reported.

FRUIT INSECTS

APPLE

GREEN APPLE APHID (*Aphis pomi* DeG.)

New York — C. R. Crosby and assistants: On May 24, at Sodus, Wayne County, stem-mothers were giving birth to living young, while in Orleans County, on June 14, they were very numerous. At Honeoye Falls they were abundant on apple "buds" in the nursery, and plentiful on one-year quince "buds."

South Carolina — J. A. Berly (June 16): This insect has caused considerable curling of the leaves in the commercial orchards in the Walhalla section.

Indiana — B. A. Porter (June 23): Within the last few weeks serious infestations have developed in some orchards at Vincennes, while others are comparatively free from aphids.

J. J. Davis: Some young orchards in central Indiana are heavily infested.

Utah — Geo. F. Knowlton (May 27): The green apple aphids are numerous and doing some damage in most of the orchards now.

APPLE GRAIN APHID (*Rhopalosiphum prunifoliae* Fitch)

Utah — Geo. F. Knowlton (May 27): Apple grain aphids are numerous and doing some damage in most of the orchards now.

ROSY APPLE APHID (*Anuraphis roseus* Baker)

Massachusetts — A. I. Bourne (June 24): This species is more abundant and more generally distributed than for the last several years. The winged migrants are just beginning to be found in numbers.

Connecticut — W. E. Britton (June 9): Scarce in most orchards where I have been but quite abundant at Stamford and Wallingford. (June 24): These insects now seem to be present in moderate numbers in nearly every orchard, and are more abundant than they were last month.

New York — C. R. Crosby and assistants: This insect is showing up in injurious numbers in Dutchess County in many orchards, and is more common than usual in Ontario County this spring. In Onondaga County this insect is still being found through most of the orchards of the county, while the second generation is commencing to appear in considerable numbers. At Honeoye Falls itnis abundant on apple "buds" in the nursery. It is becoming quite numerous in Ulster County, but is most in evidence on

trees receiving oil emulsion at the delayed dormant period instead of lime-sulphur and nicotine, while in Columbia County it is causing considerable damage.

Ohio — H. A. Gossard (June 7): The rosy apple aphid was received on this date from Cincinnati where it was found on apple.

Indiana — P. A. Porter (May 26): This species was rather scarce earlier in the season at Vincennes, but is now becoming more abundant. Winged migrants are beginning to appear, and many syrphid larvae and eggs as well as lady beetles are being observed.

J. J. Davis (June 21): Not as abundant as in 1923, and although common in some orchards, it became common too late to do great damage to fruit.

Missouri — L. Haseman (June 20): The rosy apple aphid is quite serious in some orchards of the State. Aphid parasites are doing good work on control.

CODLING MOTH (Carpocapsa pomonella L.)

Indiana — B. A. Porter (May 26): Moths have been emerging in very small numbers since May 10, at Vincennes, but a few individuals have not yet pupated. (June 23): First first-brood, larva observed leaving fruit on June 22.

J. J. Davis (June 21): Emergence over a long period this spring on account of the cool, wet season.

Illinois — W. P. Flint (June 18): The first-brood adults of the codling moth emerged very late and have been further retarded by cold weather since emergence. This brood will be extremely light judging by present indications. Not over 2 per cent of the unsprayed apples in southern Illinois orchards are showing infestation at the present. First-brood adults are still emerging in central Illinois.

Missouri — L. Haseman (June 20): Are later than normal. Few larvae are over half grown but most of them less than half grown. Brood light in central part of the State. Continued rains have hindered thorough spraying in many orchards.

FRUIT-TREE LEAF-ROLLER (Cacoecia argyrospila Walk.)

New York — C. R. Crosby and assistants: On May 17, in Columbia County, larvae were observed in small numbers, while in Ontario County on May 24, eggs were hatching, and by May 29, about 75 per cent of the eggs hatched. In Orleans County eggs were also hatching quite freely, and newly hatched larvae were observed for the first time this season. A few larvae have been observed in Onondaga County, while in Chautauqua County this insect was showing up in increasing numbers.

Ohio — H. A. Gossard (June 13): This insect was attacking orchard trees in Delaware on this date.

Utah — Geo. F. Knowlton (June 18): Fruit-tree leaf-rollers in Logan are mostly in the pupa stage, with some moths emerging, and some are still in the larval stage.

I. M. Hawley (June 23): The fruit-tree leaf-roller is not general in its spread in Utah, but in some places it is causing a great deal of loss. In Iron, Utah, and parts of Boxelder and Cache Counties its injury is very severe, and it is present in noticeable numbers in Salt Lake and Davis Counties. At present the insect is mostly in the pupa stage.

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerck)

Massachusetts — A. I. Bourne (June 24): The apple and thorn skeletonizer is beginning to make its appearance, andhas been noted in Aphrest and vicinity for about a week. Some fruit growers have felt it necessary to spray young trees, which up to now it has not been necessary to give any attention to.

New York — C. R. Crosby and assistants: The insect is getting well under way and there are prospects of a heavy infestation in Ulster County; (May 29): Larvae are found in some orchards in Dutchess County but not very numerous to date, while in Albany County eggs are just beginning to hatch.

A BUD MOTH (Recurvaria crataegella Busck)

Utah — I. M. Hawley (June 23): Was found working in buds of apple in Boxelder County, near Garland. This is the first time it has been noted in this State. The work is similar to that of the bud moth.

TENT CATERPILLAR (Malacosoma americana Fab.)

Massachusetts — A. I. Bourne (June 24): General dispersal of larvae began to occur about June 5--9. Almost invariably this species was found to be still on the increase and to have been present in larger numbers generally throughout the State than last year. Mr. Putnam, county agent of Franklin County, reported that in Greenfield the apple tent caterpillars, as they neared maturity, in one case were observed to be crawling away from a hedge row of wild cherries, which they had nearly defoliated, across a considerable strip of open, plowed ground, and had begun to feed on a small planting of strawberries, working in from the side next to the wild cherries with considerable rapidity. These young plants, set out last fall, were throwing out runners quite abundantly before the attack and seemed to be particularly attractive to the caterpillars, and the larvae were threatening to do considerable damage if unchecked. Within a few days they had completely defoliated a considerable area of the bed.

New York — C. R. Crosby and assistants: Very plentiful this year and may be seen on practically all roadside trees and in practically all orchards in Suffolk County, while it is also observed quite plentifully in neglected orchards in Albany County on roadside trees.

Fred N. Schott (June 14): On Long Island this insect is found in considerable numbers in some orchards.

New Jersey — Fred N. Schott (June 14): In the northern half of New Jersey this insect is found in considerable numbers in some orchards.

Maryland — J. A. Hyslop (June 1): Tents of tent caterpillars are more numerous than any year in the past five years at Avanel. In the McSeeney orchard they average 1 tent per tree on apples, and are seriously defoliating some trees.

FALL CANKERWORM (Alsophila pometaria Harr.)

Connecticut — W. E. Britton (June 9): Many trees stripped. Excrement dropping made a noise like rain. Some larvae nearly full grown, others only half-grown, both green and dark-gray larvae present, in the vicinity of Greenwich, Stamford, and New Haven.

FALSE APPLE RED BUG (Lygidea mendax Reut.)

Connecticut — W. E. Britton (June 11): Young fruit badly scarred and punctured, at Danbury. Observed work at Wallingford, June 16; less abundant around New Haven as compared with an average year.

New York — C. R. Crosby and assistants: Unusually abundant in Orleans County. Are abundant in scattered orchards in Wayne County, but apparently occur in smaller numbers than last year; in Columbia County they do not appear to be very numerous. In Dutchess County this insect was rather numerous in a few orchards and found in small numbers in Nassau County. They are hatching rather late in Rockland County, but appear to be quite numerous. In Ulster County they are rather widely distributed but only two heavy infestations were observed. All are in the second nymphal stage.

Virginia — W. J. Schoene (May 31): This pest seems to be gradually invading the apple section of the Shenandoah Valley from the North. It is serious in some large orchards at Winchester.

Indiana — B. A. Porter (May 27): A moderate infestation noted in a neglected orchard at Vincennes. Bugs in the late fourth instar. (June 23): Light infestations noted in several orchards in Knox, Daviess, and Vanderburg Counties. In the first two counties mentioned, adults have been captured. In Vanderburg County, characteristic injury was noted, but no adults were found.

Kentucky — B. A. Porter (June 10): A rather severe infestation noted in an isolated orchard near Henderson, Ky. On the above date the bugs were mature. Another severe infestation has been reported 12 miles south of Henderson.

A LEAFHOPPER (Cicadella hieroglyphica Say)

Missouri — A. C. Burrill (May 24): An apple orchard was so badly attacked by this species that the county agent called upon me for a relief measure. Determination of this insect was made by W. L. McAtee.

LEAFHOPPERS (Jassidae)

Massachusetts — A. I. Bourne (June 24): Leafhoppers are particularly prevalent this year. The pest has been practically reduced to a minimum in those orchards where the nicotine was used. In many cases it is hard to find any amount of material damage of these insects where careful attention was given in the calyx application. In other orchards where no particular attention was given to these insects when the calyx spray was put on, the pest has multiplied to an alarming extent. Although not positively identified it is apparently Empoasca rosae. Adults began to appear June 16.

Utah — Geo. F. Knowlton (June 7): Leafhoppers are becoming numerous on apple trees and rose bushes. Most of them are not yet adults.

New York — C. R. Crosby and assistants: In Nassau County this insect is appearing in great numbers, and at Sodus, Wayne County, it is hatching quite rapidly in the orchards. In Columbia County a few adults have been observed and are beginning to appear quite commonly in Ontario County, also appearing very commonly in Ulster County.

BUFFALO TREEHOPPER (Ceresa bubalus Fab.)

Utah — Geo. F. Knowlton (June 7): The buffalo and other treehoppers are doing considerable injury to some of the apple and peach orchards in Cache and Weber Counties. One orchard especially had a great deal of damage done to young peach trees set out two years ago, the scars covering practically all of the surface of the young trees. Usually the worst damaged orchards are being used for raising alfalfa.

A ROSE CHAFER (Macrodactylus angustatus Beauv.)

Georgia — H. H. Wright (May 24): Reported as doing considerable damage to apple at Ellijay.

APPLE FLEA-WEEVIL (Orchestes pallicornis Say)

New York — C. R. Crosby and assistants: In Onondaga County this insect is reported doing considerable damage in one orchard.

Indiana — J. J. Davis (June 21): Has been reported in conspicuous numbers in the southern third of the State.

APPLE TWIG-BORER (Amphicerus bicaudatus Say)

Nebraska — M. H. Swenk (May 15-June 15): Apple twigs considerably injured by the apple twig-borer were sent in during the last week in May from Saunders County.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Massachusetts — A. I. Bourne (June 24): The European red-mite is very generally distributed, and seems to be increasing rapidly where measures for its control have not yet been put into effect.

Connecticut — Philip Garman (June 24): Very few of these insects have been noticed this year as compared with an average year.

Ohio — H. A. Gossard (June 20): An orchard of Damson plums that was very badly infested last year with Paratetranychus pilosus was given a dormant spray of miscible oil (one of the proprietary paraffin miscible oils) and is so clean of mites that it is almost impossible to locate even a single individual.

PEAR

ZIG-ZAG PEAR BORER (Agrilus sinuatus Oliv.)

Connecticut — M. P. Zappe (May 25): Several old trees have been killed by this insect and had to be removed at Shelton.

PEAR PSYLLA (Psylla pyricola Foerst.)

Connecticut — Philip Garman (June 24): Abundant in a few orchards at Southington; also reported from Hebron.

New York — C. R. Crosby and assistants: The pear psylla is rather numerous in Ontario, Monroe, Onondaga, Orleans, and Genesee Counties, and it is also reported present in Wayne, Niagara, and Ulster Counties in noticeable numbers. Eggs were generally beginning to hatch during the middle of the month.

Ohio — H. A. Gossard (June 12): Young larvae of the pear psylla were observed on the leaves of pear at Waterville on this date. The pear trees were quite discolored with scoty fungus last fall but were sprayed with scalecide for the dormant spray and with lime sulphur and arsenate of lead for the petal-fall spray. At the present time it is very difficult to find any larvae at all.

PEAR-LEAF BLISTER-MITE (Eriophyes pyri Pgst.)

New York — C. R. Crosby and assistants: Injury showing up in most orchards to a slight degree in Columbia County.

Utah — Geo. F. Knowlton (June 7): The pear-leaf blister-mite work is showing up around the State now. Only bad in a small percentage of the orchards, and in certain varieties of trees.

PEAR MIDGE (Contarinia pyrivora Riley)

New York — C. R. Crosby and assistants: Observed for the first time in Columbia County, on May 31; while on June 7 the insect was certainly a factor here. The insect and the infested fruits can easily be found in most orchards and in some the damage is serious. In Ulster County, on May 22, Bosc variety was found infested. In Dutchess County the first larvae were observed on May 23, and by June 14 it was found to be rather general in most orchards.

PEACH

ORIENTAL PEACH MOTH (Laspeyresia molesta Busck)

Connecticut — Philip Garman (May 24): First signs of twig injury noticed on May 23, in Fairfield County. Apparently less abundant than last year.

Maryland — A. L. Quaintance (June 30): Not nearly as bad as last year in Montgomery County.

Georgia — J. D. More (June 4): Within the locality of Valdosta this insect was reported attacking peach twigs and fruit.

PIN-HOLE BORER (Monarthrum fasciatum Say)

Indiana — B. A. Porter (June 23): In late May began attacking peach trees which had been killed or weakened by the winter at Vincennes. Appeared before the shot-hole borer.

TWELVE-SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata [illegible] Fab.)

Georgia — Oliver I. Snapp (June 11): Injury to foliage of one-year-old peach trees by this insect was severe enough in one orchard to warrant control measures at Fort Valley.

BUMBLE FLOWER BEETLE (Euphoria inda L.)

South Carolina — J. A. Berly (June 16): One specimen of this insect was received and reported as damaging the fruit on several peach trees, early variety.

GREEN PEACH APHID (Myzus persicae Sulz.)

Nebraska — M. H. Swenk (May 15-June 15): In south-central Nebraska there have been reports of the green peach aphid being numerous on peach foliage.

Utah — Geo. F. Knowlton (May 27): The green peach aphid is found commonly on peaches this spring. It was collected from 18 different plants in this State last summer, and seems to be common and often doing damage in the gardens.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Massachusetts — A. I. Bourne (June 24): The plum curculio was unusually late in making its appearance this year. Here at Amherst there was no sign of the adult until the 9th of June. This date was approximately a week, or slightly over, later than the calyx spray of apples. Thus far we have seen very little scarring of fruit caused by this insect. Under date of June 17, Mr. Farrar of Middlesex County reports finding very few scars as yet. Mr. Calkins of northern Worcester County reports the approximate date of first appearance as around the 12th to 14th for this particular section, and reports from Marlboro in the central or southern part of the county make this date around the 9th and 10th. In isolated orchards the pest has been doing considerable damage but generally throughout the county does not seem to be quite as severe as last year. Mr. Fiske, another grower in Worcester County, reports finding no visible evidence of injury by the curculio up to the 14th of June. Mr. Gould, in the western part of Hampshire County, reports having collected the adults beginning about the 8th or 10th of June, and reports that up to the present time damage to the fruit by the stings has been very slight.

Connecticut — M. P. Zappe (June 24): Unsprayed crab apples nearly 100 per cent injured. Curculios appeared a little earlier than usual this year at Hamden.

Delaware — C. O. Houghton (June): Apples, especially, have been badly injured by this insect in this section (Newark) and a heavy drop of fruit has occurred of late.

Georgia — Oliver I. Snapp (June 14): The peach crop is remarkably free from curculio injury this year, and is the cleanest since 1918. Early varieties are now moving free from curculio damage at Fort Valley.

Missouri — L. Haseman (June 20): Has been abundant in the central part of the State; cherries, plums, and apples show serious injury. In sour cherries larvae are about one-half grown.

CHERRY LEAF-BEETLE (Galerucella cavicollis Lec.)

Michigan — R. H. Pettit (June 24): Receiving daily numbers of this insect from the cherry belt of the State. The cherry belt extends up the northern half of the west coast and into the Upper Peninsula. Galerucella seems to be more numerous than in previous years.

TWO-SPOTTED ANOMALA (Anomala binotata Gyll.)

Nebraska — M. H. Swenk (May 15-June 15): During the last week in May the beetle was complained of as eating the leaves and gnawing at the young fruits of cherries in Fillmore County.

CHERRY APHID (Myzus cerasi Fab.)

New York — C. R. Crosby and assistants: Present in considerable numbers in Columbia County on June 14, and becoming common on terminal growth in Ulster County on sour cherry. At Honeoye Falls it is severe on Black Tartarian one-year buds, while at Milan young trees are badly infested.

Ohio — H. A. Gossard: This insect was received on May 23 from Killbuck on sweet cherry, and on June 17 from Mt. Vernon on sweet cherry. I have observed it several times during the last month to be rather numerous on sweet cherry at Wooster.

Indiana — J. J. Davis (June 21): Common in some young cherry orchards in central Indiana on June 19.

Nebraska — M. H. Swenk (May 15-June 15): During latter May and early June the cherry aphid was present on cherry trees in great abundance everywhere.

Utah — Geo. F. Knowlton (June 10): The cherry aphid is distributed over the State, but so far this year little real damage has been noted.

PLUM

PLUM APHID (Hysteroneura setariae Thos.)

Mississippi — R. W. Harned (May 27): The rusty plum aphid has attracted considerable attention in the State this spring, as it usually does at this time of the year. Specimens have been received from almost every section of the State.

Nebraska — M. H. Swenk (May 15-June 15): During the latter part of May and early June the rusty brown plum aphid was present on plum trees in great abundance everywhere.

SAY'S BLISTER BEETLE (Pomphopoea sayi Lec.)

New York — C. R. Crosby (June 13): Doing considerable damage to plum trees at Newark, while at Honeoye Falls, Mr. A. L. Pierstorff reports this insect eating up two rows of Sapa plums.

RASPBERRY

RASPBERRY FRUIT WORM (Byturus unicolor Say)

New York — C. R. Crosby and assistants: Quite prevalent and a few men have already sprayed for it in Chautauqua County, while in Ulster County, on May 22, they were observed emerging on this date, and by June 7 were found to be very numerous in most plantings.

GRAPE

ROSE CHAFER (Macrodactylus subspinosus Fab.)

Massachusetts — A. I. Bourne (June 24): Within the last week, the first specimens of the rose chafer began to make their appearance. Within a matter of a day or two, roses, grapes, etc., have been found to be literally covered with them.

Connecticut — M. P. Zappe (June 24): First beetles were observed on June 16, at Orange, Milford, and Hamden. They appear to be more plentiful than usual as compared with an average year.

Delaware — C. O. Houghton (June 24): Much less injury has been caused by this pest than is usual here at Newark.

Ohio — E. W. Mendenhall (June 26): Rose beetles are doing great damage to apples, cherries, and grapes in Knox County. Spraying arsenate of lead mixed with molasses seems to be effective.

Indiana — J. J. Davis (June 21): Reported from Vanderburg County June 11, and from other southwestern Indiana counties about the same time, injuring fruit and foliage of peach, apple, cherry, blackberry, and grape. They had been first observed at Evansville in Vanderburg County on May 30, injuring peach. Farther to the east, especially in Harrison County, poultrymen experiencing much trouble, the young chickens dying as a result of feeding on rose beetles which are very abundant. In a letter dated June 18, County agent Clunie of Corydon, Harrison County, writes: "Our county is being absolutely overrun with rose beetles. They are literally eating the cherries and attacking apple trees and walnut trees and it seems in sections where the outbreak is worst that they are eating on all trees as well as roses and shrubs. Blackbirds and doves and other birds which are eating the insects are being found dead in large numbers. (June 26): The rose chafer is now appearing at Elkhart and other northern Indiana points, damaging apples, plums, grapes, cherries, currants, etc.

B. A. Porter (June 23): Serious local outbreaks reported early in the month from Evansville and Princeton near the above localities.

Tennessee — G. M. Bentley (June 17): Specimens have been received from 25 different localities representing eastern, middle, and western parts of Tennessee. Adult beetles eating partly grown apples and peaches, also feeding upon cherries just about ready to be picked. Rose bushes in some 5 different centers have been reported seriously damaged by this insect. In Campbell County several hundred young chickens were killed by eating this insect.

Nebraska — M. H. Swenk (May 15-June 15): In the sandhill counties the rose chafer appeared in somewhat supernormal numbers during the first week in June.

GRAPE LEAFHOPPERS (Erythroneura comes Say)

New York — C. R. Crosby and assistants: Has shown up in considerable numbers in certain places in Chautauqua County in the last two days, June 14.

CURRANT

GOOSEBERRY FRUITWORM (Zophodia grossulariae Riley)

Mississippi — R. W. Harned (May 27): An insect thought to be the gooseberry fruitworm has attracted some attention as a pest of the blueberry at Poplar, Pearl River County.

CURRANT APHID (Myzus ribis L.)

New York — C. R. Crosby and assistants: Few of these insects are appearing in Chautauqua County on May 24, while in Ontario County they appeared rather commonly on the opening leaves. In Ulster County they were common and in some patches rather serious on June 7.

Delaware — C. O. Houghton (June): This plant-louse is more abundant than usual here at Newark, and causing serious injury to some plants.

Ohio — H. A. Gossard (June 10): Received from Black Run on currant on June 10, and from Mt. Vernon on June 17.

Indiana — J. J. Davis (June 21): Common throughout the State, reports being received May 22 to June 5.

Nebraska — M. H. Swenk (May 15-June 15): An almost unprecedented abundance for Nebraska of the currant aphid has occurred.

Utah — Geo. F. Knowlton (June 18): The currant aphid is doing considerable damage to the red currants in Smithfield, nearly all leaves being rolled and discolored, with the under side of the leaves nearly covered with wingless and a few winged forms.

IMPORTED CURRANT WORM (Pteronidea ribesi Scop.)

New York — C. R. Crosby and assistants: Worms were found hatching and feeding in Ulster County on May 17, and by the 29th of May infestations were scarce and light.

Nebraska — M. H. Swenk (May 15-June 15): The imported currant worm was quite injurious, as usual, to currants and gooseberries during latter May and the first week in June.

CURRANT STEM-GIRDLER (Janus integer Norton)

Michigan — R. H. Pettit (June 19): The currant stem-girdler has appeared in one or two places and the one located near Grand Rapids has girdled off the tips of 2 acres of currants.

PECAN

HICKORY SHOOT CURCULIO (Conotrachelus aratus Germar)

Mississippi — R. W. Harned (May 27): An insect that is thought to be the hickory shoot-curculio has been serious enough to attract considerable attention at several points in the State. Specimens have been received from Jones, LeFlore, and Lincoln Counties. This insect has not attracted attention as a pecan pest in previous years.

PECAN-LEAF CASE-BEARER (Acrobasis nebulella Riley)

Georgia — N. P. Peebles (May 17): Reported from Macon, Bainbridge, and Preston attacking pecans.

Mississippi — R. W. Harned (May 27): Quite a few complaints have been received from southern Mississippi during the past few weeks in regard to the pecan case-bearer damaging pecan trees. Apparently these insects are much more numerous than usual in the region from 30 to 60 miles north of the Gulf Coast.

Phylloxera spp.

Mississippi — R. W. Harned (June 20): Are apparently more numerous on pecan trees throughout this State this year than during any recent year. Complaints in regard to them are being received almost every day from different parts of the State.

PHYLLOXERA GALLS (Phylloxera caryae-ren Riley)

Mississippi — R. W. Harned (May 27): These galls have attracted much attention in different parts of the State during the past few weeks. The only specimens that have so far been determined definitely were determined by T. L. Guyton, Harrisburg, Pa., as Phylloxera caryae-ren.

FALL WEBWORM (Hyphantria cunea Dru.)

Mississippi — M. R. Smith (June 17): The fall webworm is beginning to show up slightly on pecan trees at Atta Bena. Judging from the size of the caterpillars seen, their generation is in its earliest stages.

A LEAF-BEETLE (Colaspis favosa Say)

Mississippi — R. W. Harned (June 20): The leafbeetle Colaspis favosa was found seriously injuring pecan leaves in a nursery at Pascagoula on June 15.

BLUEBERRY

A MOTH

Alabama — J. M. Robinson (June 25): The blueberry industry has been developing in southern Alabama in the last two years. It has one moth that is causing a small percentage of damage to the fruit. We have not yet been able to determine definitely the species. As soon as we breed out some adults, we will then be able to report more definitely on this insect.

TRUCK-CROP INSECTS

MISCELLANEOUS FEEDERS

PAINTED LADY BUTTERFLY (Vanessa cardui L.)

Indiana — J. J. Davis (June 25): Reports of abundant occurrence on Canada thistle have come from Howard, St. Joseph, La Porte, Tippecanoe, Benton, and Whitley Counties, in some cases apparently cleaning up infestations. I do not imagine that they destroyed the infestations but doubtless they did prevent seeding in some cases. First reports were received June 23 and others yesterday and today.

Arizona — V. L. Wildermuth (June 16): In the June 1 number of the Insect Pest Survey Bulletin I notice with considerable interest E. A. McGregor's description of the migration of the painted lady butterfly. It will be of interest to place upon record the fact that the flight of this butterfly also occurred through southern Arizona in approximately the same numbers as estimated by Mr. McGregor. For a period of five days following April 8 the air was full of this painted lady at all times, the general direction of flight being northwest. Observations were made at Tempe, Tucson, and Yuma, and at all these places the numbers seemed to be about the same.

I was interested in knowing that Mr. McGregor thought that possibly the source of this migration was either the foothills of the Sierras or the Sierras proper. We have been suspicious that the source was somewhere in central Mexico. It would, indeed, be interesting to know the exact source of this unusual flight.

CUTWORMS (Noctuidae)

Maine — E. M. Patch (June 3): A report of cutworms was received from Skowhegan stating "Destroying everything in the garden." No specimens were submitted. (June 20): One nearly grown larva of Agrotis ypsilon was sent from Old Orchard with the report "The ground seems to be well filled with them. They eat my cucumbers, peas, and beans."

Connecticut — M. P. Zappe (June 24): Many complaints of cutworm injury to practically all garden truck have been received from New Haven County.

New York — A. G. Newhall (May 20): Cutworms were first observed on this date attacking truck crops at Williamson, Wayne County.

K. E. Paine (June 14): Climbing cutworms are very numerous all through the grape belt in Chautauqua County and are doing much damage to young grapes and tomatoes.

POTATO AND TOMATO

TOMATO SUCK-FLY (Macrolophus separatus Uhler)

Texas — M. M. High (June 15): On my recent trip to Texas I found that the tomato suck-fly has extended its range the past year and that it is just getting into the tomato-growing district of eastern Texas, although Mr. Del Curto says that it has been in Austin more than two years. Mr. Del Curto was in the Valley on his way to Mexico and informed me that it was almost impossible to grow tomatoes about Austin on account of the suck-fly. I went to College Station to see what they had on the distribution of this pest. They report it as far east as Troup.

IMBRICATED SNOUT-BEETLE (Epicaerus imbricatus Say)

Tennessee — G. M. Bentley (June 17): Several reports were received accompanied by specimens and injury to young tomato plants.

TOMATO FRUITWORM (Heliothis obsoleta Fab.)

Mississippi — H. W. Allen (June 23): Heliothis obsoleta has been doing more damage to green tomatoes at A. & M. College. In one block examined 2 per cent had been destroyed; in another, somewhat more mature, 12 per cent were destroyed.

Louisiana — C. E. Smith (June 10): I do not believe that I have ever observed this insect as bad on tomatoes at Baton Rouge as it is this year.

CABBAGE

CABBAGE MAGGOT (Hylemyia brassicae Bouché)

Connecticut — W. E. Britton (June 24): This pest is attacking cabbage at Vernon, Hebron, Hamden, New Haven, and Ellington. The abundance is about as usual.

New York — C. R. Crosby and assistants: The cabbage maggot is not as serious as last year in Ontario County and but few flies have been observed in Wayne County. In Nassau County there was heavy oviposition during the latter part of May.

Ohio — H. A. Gossard (June 4): The cabbage root maggot was received from New Comerstown June 4 on cabbage. I have also observed it to be rather plentiful on cabbage and cauliflower around Wooster.

STRAWBERRY

STRAWBERRY LEAF-ROLLER (Ancylis comptana Froehl.)

Kansas — J. W. McColloch (June 11): Many leaves of strawberry are infested in an acre patch at Stafford.

STRAWBERRY FLEA-BEETLE (Haltica ignita Ill.)

Maine — E. M. Patch (May 29): A report of flea-beetles was received from Gorham stating that "They are coming from my old bed to my new set-out one." This is evidently a heavy infestation.

New York — G. E. R. Hervey (May 16): Flea-beetles were found to be very destructive in some plantings of strawberry in Dutchess County, especially in those where the plants have been set out this year.

STRAWBERRY ROOT-WEEVIL (Brachyrhinus spp.)

Utah — I. M. Hawley (June 23): The strawberry crown girdler is working in old strawberry patches throughout the State. It has been sent in from Utah, Cache, Weber, Morgan, Salt Lake, and Boxelder Counties.

Geo. F. Knowlton (June 11): Strawberry root-weevils, Brachyrhinus ovatus L. and B. rugifrons Gyll., have been observed this spring in Logan and Smithfield. Last year they destroyed one patch and damaged many patches in Cache and other counties.

STRAWBERRY WEEVIL (Anthonomus signatus Say)

Maine — E. M. Patch (May 29): A single specimen of the strawberry weevil was sent with about 20 strawberry flea-beetles from Gorham. They were evidently feeding in company.

New York — G. E. R. Hervey (May 16): Adults were observed on two plantings in Dutchess County and in one case were causing some injury. (May 29): Injury has been very slight this year and very few growers have found it necessary to use control measures.

C. C. Wagoner (May 17): Injury is found quite common in Ulster County. (May 19): Eggs were found on this date. (May 29): Infestations are very light.

A. B. Buchholz (May 24): This pest is reported in one bed though for this time of year in Columbia County they appear to be very scarce. (May 31): While not appearing to be very abundant spray warning was sent out on this date.

Tennessee — G. M. Bentley (June 17): This is a serious pest to cultivated strawberries in eastern and western Tennessee.

ASPARAGUS

CUTWORMS (Noctuidae)

Michigan — R. H. Pettit (June 14): Mr. Harman just got back from a visit to Lake City where he looked into the cutworm matter. He finds that the ground on which the asparagus was planted has light, sandy soil. The land had been in sod for several years until it was plowed in 1921 and planted to corn and in 1922 it was plowed and fertilized with 40 loads of barnyard manure to the acre, planted to asparagus. It is still in asparagus. In 1922 the cutworms were very plentiful, injuring the crop and causing serious loss. The worms have decreased each year quite materially. The damage is done chiefly below the surface of the ground and shows up when the stalk pushes through, then displays the so-called "cripple." It seems that some of the work is done at the surface, or at least that the worms come to the surface at night and travel about, but that they do much of their work beneath the surface. The owner has been able to collect a quart of more of the cutworms during a night by searching with a lantern.

Now about the failure of the bran bait: After a considerable inquiry it develops that they used arsenate of lead instead of white arsenic in making their bait and, of course, it is perfectly natural that it should not work.

I sent them a pound of arsenate of soda and 3 ounces of high-grade banana oil with instructions for making up 20 pounds of bran to find out if that would work. Apparently that did; they used it on another crop which was being attacked by cutworms and the cutworm work ceased immediately after the application of the bait.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

South Carolina — J. A. Berly (June 16): The Mexican bean beetle has appeared in numbers within the past two weeks and is sufficiently injurious to warrant control measures, the principle injury being to snap beans.

N. F. Howard (June 27): Now eastward to a line from York to Aiken County.

Georgia — Neale F. Howard (June 16): The Mexican bean beetle has now been found in a belt extending from Troup and Stewart Counties in the western part of the State across the State to Richmond and Burke Counties, so that now this insect covers practically the northern two-thirds of the State. (June 27): Found 11½ miles west of Thomasville.

Tennessee — G. M. Bentley (June 17): At present it infests 70 of the 95 counties of the State. At present the adults, eggs, and larvae can be found. Adult beetles seem to be doing more injury from eating this spring than previously.

Ohio — H. A. Gossard (June 20): Reported from Chillicothe and Columbus.

Alabama — Neale F. Howard (June 9): Prof. J. M. Robinson reports that a number of specimens have been taken at Auburn, in Lee County. This infestation was reported by Dr. Thomas last year, but the beetles were very scarce.

Mississippi — R. B. Deen (May 30): Beetles were found on 4 new and 2 of last year's places in Tishomingo County. They were all adults, probably the ones that passed the winter in hibernation.

Neale F. Howard (June 9): Prof. R. W. Harned reports 6 new properties infested at Belmont, in Tishomingo County. This county was found to be infested by the State Plant Board last year and was reported. (June 16): Infestation at Corinth, in Alcorn County.

R. W. Harned (June 20): The Mexican bean beetle has invaded two new counties during the past month. They have been found on farms in Alcorn and Prentiss Counties. This makes four counties in the northeastern corner of the State that are now infested with this insect. Tishomingo and Itawamba Counties were infested early in 1923.

PEAS

PEA APHID (Illinoia pisi Kalt.)

Connecticut — B. H. Walden (June 19): One field of peas at New Haven badly infested; in two fields no aphids were observed. They are less abundant this year.

New York — L. C. Tyler (May 29): Aphids were observed in small numbers on peas this date in Nassau County. (June 7): Aphids are becoming more numerous and threaten to become serious.

Wisconsin — J. E. Dudley Jr. (June 1): On account of the cool, wet spring the conditions surrounding the Government Field Station at Columbus are quite unusual.

The pea aphid hatched late in April and has been very slowly increasing and spreading until now it is present in practically all clover and alfalfa fields in this vicinity although none have yet been found on peas. There is an unusual abundance and thorough distribution of the aphid's natural enemies. Ladybirdsbeetles are very thick and in some fields will doubtless control the aphid entirely. On May 31 over one thousand of these beetles were collected with the aphidozer from about one acre of alfalfa. Syrphid flies have put in their appearance. Internal parasites of the aphid are present in unusual numbers for this time of the year, and in places the fungous disease has already killed 30 to 40 per cent of the

With all these enemies at work it begins to look as though the aphid might be held in partial check unless especially favorable weather for the aphid should occur between now and the start of the canning operations.

Excerpt from J. E. Dudley's letter of June 24: Yesterday we ran the aphidozer through an acre of alfalfa just before it was cut and secured a very interesting collection of many species of insects. **** We recovered 9,867 syrphid larvae of two principal species, 785 coccinellid larvae, and 482 coccinellid adults, making a grand total of 11,134 predators which were actually counted. There were hundreds of very small syrphid larvae which escaped us and probably thousands of coccinellid larvae which it was not possible to find or count. This gives some idea of what the total number of predators in all stages must be in an acre of heavily infested alfalfa. I expect to have this test duplicated later on peas. We have colonized most of these predators in a pea field as heavily infested as any of them are at present in an effort to ascertain whether control by predators is possible when they occur in very large numbers.

Nebraska — M. H. Swenk (May 15-June 15): Ornamentals of various sorts have shown a widespread and heavy infestation, especially by Macrosiphum pisi on sweet peas.

Utah — I. M. Hawley (June 23): The pea aphid is not numerous so far this year. There are a few on some vines but it is doubtful if there will be any loss from it as peas are now forming pods.

BLACK-LINED CUTWORM (Agrotis fennica Tausch.)

Maine — E. M. Patch (May 27): Nearly full-fed larvae were sent in from Maplewood Farm at Wells with the statement that they are destroying peas. These are the first specimens of this species that I have seen in many years.

CUCUMBERS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Massachusetts — A. I. Bourne (June 24): First appearance in the eastern part of the State the 15th - 17th of June. Same date noted here at Amherst and vicinity when large numbers of them literally covered the young developing squash and cucumber plants. The severity of attack was more marked than had been noted for several years.

Ohio — T. H. Parks (June 23): Very injurious to cucumbers and watermelons in the Scioto Valley. The calcium-arsenate and gypsum dust mixture is being used successfully in controlling them.

Indiana — J. J. Davis (June 21): Reports again indicate best control with calcium arsenate and gypsum mixture. They are not as abundant this year as usual.

Mississippi — R. W. Harned (June 20): The striped cucumber beetle has, as usual, been reported as injurious to melons at several points in the State.

Missouri — L. Haseman (June 20): In the central part of the State it has appeared on crops only in the last week, June 14-21.

Nebraska — M. H. Swenk (May 15-June 15): More than usually numerous ... is doing serious injury to curcubits at this time.

MELON APHID (Aphis gossypii Glov.)

Mississippi — R. W. Harned (May 27): The melon aphid has been reported as rather abundant in cucumber fields around Wiggins, in Stone County.

POTATO FLEA-BEETLE (Epitrix cucumeris Harr.)

Connecticut — W. E. Britton (June 24): Flea-beetles are attacking cucumber, squash, tomato, and eggplant at North Haven, Woodstock, Brooklyn, Danielson, Cheshire, Southington, and Plainville.

MELONS

TWELVE-SPOTTED CUCUMBER-BEETLE (Diabrotica duodecimpunctata Fab.)

Georgia — C. V. Shirley (June 2): This insect is reported as very destructive to watermelon at Fayetteville, in Fayette County.

ONIONS

ONION THRIPS (Thrips tabaci L.)

Iowa — Carl J. Drake (May 28): The onion thrips seems to be quite numerous in the vicinity of Ames this spring. This insect did a considerable amount of damage to the onion crop in this State last year.

Utah — I. M. Hawley (June 23): Work of the onion thrips began to appear about June 1 and is quite abundant now in Davis County.

ONION MAGGOT (Hylemyia antiqua Meig.)

New York — E. L. Felix (May 29): A few maggots have been found infesting the old onions in the field at Elba.

Illinois — C. C. Compton (June 12): Maggots are appearing in onions in Cook County in considerable numbers. At this early date the damage is not great.

Wisconsin — J. E. Dudley, Jr. (May 24): General egg laying occurred on May 16 and 17, which were bright and warm. Cull onions used as traps became infested to the extent of two eggs per cull in Racine County. Egg laying has practically been suspended since the 17th, due to cool, rainy weather. No natural enemies have been observed.

Utah — I. M. Hawley (June 23): The onion maggot is destroying all onions in some places in Cache County.

BEETS

SUGAR-BEET WEBWORM (Loxostege sticticalis L.)

Montana — J. R. Parker (June 24): Large flights of sugar-beet webworm moths were noted during the first two weeks in June in many localities east of the Divide and, judging from the great numbers of moths, some damage to sugar beets may result fromtthis pest. Aside from grasshoppers and sugar-beet webworm moths, insect pests have been present in unusually small numbers.

Utah — I. M. Hawley (June 23): Sugar-beet webworms are appearing in injurious numbers in Utah, Weber, and Cache Counties.

SUGAR-BEET ARMYWORM (Caradrina exigua Hbn.)

Utah — I. M. Hawley (June 23): Sugar-beet armyworms are doing considerable damage in Utah County.

SUGAR-BEET ROOT-MAGGOT (Tetanops aldrichi Hendel)

Utah — I. M. Hawley (June 23): Sugar-beet root-maggot flies were late in coming out. Eggs are being deposited in large numbers at the present time.

A BEET LEAF-MINER (Pegomyia vicina Lint.)

Delaware — C. O. Houghton (June): Beet leaves are very badly infested at Newark this year.

SWEET POTATOES

TORTOISE BEETLES

Mississippi — R. W. Harned (June 20): Several species of tortoise beetles have been reported from different parts of the State on sweet potatoes, including Chelymorpha cassidea Fab. Metriona bicolor Fab., Chirida guttata Oliv., and Metriona bivittata Say.

FLEA-BEETLES(Halticinae)

South Carolina — J. A. Berly (June 16): We have had one report from Easley of flea-beetles causing considerable damage to sweet potato plants that had not been set long. Did not have opportunity to determine the species.

A BLISTER BEETLE (Epicauta lemniscata Fab.

Mississippi — R. W. Harned (June 20): Blister beetles have been reported as damaging sweet potatoes and tomatoes in LeFlore and Sunflower Counties.

SPHINX LARVAE (Herse cingulata Fab. et al)

Alabama — J. M. Robinson (June 11): Yesterday we received some specimens of sphinx larvae of, at least, three different species, reported as having already destroyed three acres of sweet potatoes.

Georgia — B. M. Gaddis (May 25): Damage to sweet potatoes at Tifton by sphinx larvae is minor.

Syntomeida impomeae Harr.)

Georgia — B. M. Gaddis (August 7): Attacking moon vine at Ridgeville.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano)

Mississippi — M. M. High (June 5): The pepper weevil has shown up again in spots, but apparently in small numbers, although Alsmeyer (county agent), San Benito, reports one heavy infestation in the county, and I have arranged with him to conduct some experiments.

COTTON

BOLL WEEVIL (Anthonomus grandis Boh.)

South Carolina — J. A. Berly (June 16): Received within the past few weeks a few weevils from Orangeburg, Greenwood, and Clemson College, collected on young cotton plants in fields.

Georgia — J. W. Bunn (May 28): At Fairfax they are just starting to appear. Although no other material has been sent in since the above date, reports are that the boll weevil is becoming increasingly prevalent.

Mississippi — T. F. McGehee (June 17): First weevil found in this section on May 24 this year as compared with May 28 last year. Weevils do not appear to be as numerous this year as last year this same date.

R. W. Harned (June 20): The boll weevil is reported from most sections of the State, but almost everywhere it seems to occur in much less numbers than a year ago at this time.

Geo. E. Riley (June 13): 1,950 stalks of cotton about knee high with from 5-10 squares were examined in vicinity of Yazoo and Mississippi Rivers and not a single weevil was found.

Oklahoma — E. E. Scholl (June 23): Reported from the following counties: Sequoyah, LeFlore, Muskogee, McIntosh, Johnston, Atoka, and Murray.

Texas — F. L. Thomas (June 7): Three per cent infestation reported from Brownsville.

GARDEN WEBWORM (Loxostege similalis Guen.)

Oklahoma — E. E. Scholl (June 23): The garden webworm is at work in cotton fields in the extreme southeastern part of the State.

Texas — F. L. Thomas (June 20): Has been causing some concern to cotton growers. It has been abundant in four counties. Began the last of May in Hidalgo County.

WINGLESS MAY BEETLES (Phyllophaga cribrosa Lec.)

Oklahoma — E. E. Scholl (June 23): Wingless May beetles are very destructive to cotton plants in the Counties of Cotton, Tillman, and Jackson. The bran mash used for grasshopper control work is being successfully used for this insect.

COTTON APHID (Aphis gossypii Glov.)

Georgia — J. W. Bunn (May 28): Heavily parasitized; many ladybird larvae present at Fairfax.

Oliver I. Snapp (June 14): Very abundant in some fields this season at Fort Valley.

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

Georgia — T. F. Carter (May 8): Reported from Experiment and Social, attacking cotton.

Oliver I. Snapp (June 7): A planter at Culverton reports that about 10 acres of cotton has been seriously injured by this insect at this place.

GRANULATED CUTWORM (Feltia annexa Treit.)

Georgia — F. S. Chamberlin (June 10): A very heavy infestation of Feltia annexa was observed in one instance at Tifton on June 10. The infestation had started in a field of burr clover but as this supply of food became exhausted, the larvae moved into a field of cotton on one side and into a field of beans on the other. Much damage was done in each instance.

COTTON-BOLL CUTWORM (Prodenia ornithogalli Guen.)

Alabama — J. M. Robinson (June 25): The cotton-boll cutworm has been reported as doing considerable damage to cotton foliage in the northern portion of the State.

Mississippi — R. W. Harned (June 20): The yellow striped armyworm or cotton-boll cutworm has attracted attention throughout the State during the past month. Specimens were received from LeFlore, Jackson, George, and Noxubee Counties.

STALK BORER (Papaipema nitela Guen.)

South Carolina — J. A. Berly (June 21): Appeared in a field about June 16, and has caused injury to quite a few plants at McCormick.

Mississippi — T. F. McGehee (June 17): Stalk borers are doing more damage than usual to young cotton in this section, Holly Springs.

R. W. Harned (June 20): The moth stalk borer has attracted some attention in the northern part of this State as a pest of cotton during June.

COTTON SQUARE-BORER (Strymon melinus Hbn.)

Oklahoma — E. E. Scholl (June 23): The cotton square-borer is at work on cotton fields in the extreme southeastern part of the State.

A CURCULIONID

Alabama — J. M. Robinson (June 25): May 29 we received several specimens of a beetle from Cedar Bluff, which has been determined by H. P. Loding of Mobile as being Lepidocricus herricki Pierce. This insect was reported from Mississippi in 1904 as attacking cotton foliage and doing considerable damage.

WIREWORMS (Elateridae)

Louisiana — T. E. Holloway (June 17): In response to a request of a sugar planter, W. E. Anderson, State entomologist, and I visited a plantation near Morgan City, and found wireworms injuring young sugar cane in low, newly cleared land. The "eyes" were damaged on the planted seed cane, and borings were made at the base of the young plants somewhat similar to the work of Diatraea. Three hundred acres were said to be affected. Several control experiments were started.

F O R E S T A N D S H A D E - T R E E I N S E C T S

MISCELLANEOUS FEEDERS

PERIODICAL CICADA (Tibicina septendecim L.) Brood XXIII.

Virginia — William Middleton (June 4): I picked up the accompanying pupa case of what appears to be the periodical cicada at Falls Church, Va., on June 4. This may be fairly interesting because no emergence is due there this year. I guess that it is a belated individual of the 14th brood and if there are sufficient of them they may form a regular appearing colony of the 15th brood.

Indiana — J. J. Davis (June 21): Began to show up in Vanderburg and Gibson Counties on June 11, and Montgomery reported it from Posey County on June 12. County agent Wilson of Evansville made a trip from Evansville to Terre Haute on June 14 and observed cicadas plentiful as far north as Sullivan.

B. A. Porter (June 3): Large numbers are emerging at Vincennes. Basil E. Montgomery also observed numbers of pupa shells on June 1. (23): Definite reports have come in of the occurrence of one or more swarms in each of the following Counties: Vanderburg, Posey, Gibson, Pike, Knox, and Daviess. The first to emerge near Vincennes were of the smaller variety, but both varieties were present later. Two distinct swarms have been noticed in the eastern part of the County, near the Wabash River, in Lawrence County.

Kentucky — H. C. Burnett (June 18): I noticed in the Globe Democrat a week ago or so about Brood XXIII of the so-called locusts. They have appeared here and are quite abundant. There are more now than there have been since I was a boy, 35 years or more ago at Kirksey, and I am now 52 years old.

Tennessee — Geo. A. Lyles (May 31): Locusts are in this part of the country, in the locality of Mason, and many people think they poison berries and other fruit so they are unfit for food.

C. B. Betts (June 5): We are seeing an increasing number of locusts from day to day. Their song through the day is one continual hum.

G. M. Bentley (June 17): Periodical cicada, 13-year variety, Brood XXIII, due to appear in all of the west Tennessee counties and some two-thirds of the counties in middle Tennessee, is making its appearance at this time.

Illinois

W. P. Flint (June 9): In my last notes for the Insect Pest Survey mention was made of the fact that the nymphs of this brood were then close to the surface. The first adults were noticed by Mr. Chandler at Carbondale on May 31, and were abroad in considerable numbers by June 7. While the records would indicate that there would be some adults in woodlands as far north as Urbana, we have failed to see any thus far.

Mississippi

R. W. Harned (June 20): Brood XXIII of the periodical cicada has now practically disappeared. A few specimens, however, are still being received daily. So far specimens of this insect have been received from Alcorn, Benton, Bolivar, Calhoun, Copiah, Carroll, DeSoto, Granada, Holmes, Humphreys, LaFayette, Tippah, Union, Yalobusha, Washington, Wilkinson, and Yazoo Counties.

Geo. H. Kent (May 16): Stragglers of a seemingly new brood of Cicada tredecim have reappeared during this month in Franklin County, in small numbers. This brood was first observed in the year of 1872, likewise in 1885, 1898, 1911, and now in 1924.

Edgar Roberts (June 4): In the past 10 days the locust has shown up in numbers and as this is the heart of the fruit belt, and there have been several thousand trees set out here this spring, it is greatly feared that they will do considerable damage.

Missouri

L. Haseman (June 20): The periodical cicada has appeared a little later than usual. Heavy rains have probably held them back some. Are reported abundant in some Ozark counties in central Missouri. In Boone County they have not yet attracted attention (June 20): Brood seems lighter than usual.

Arkansas

W. J. Baerg (June 2): I have a report from Marianna, Lee County, that the periodical cicada has been showing up here in fairly good numbers during the last few days. The report is dated May 30, and specimen accompanying letter is Tibicen septendecim-tredecim.

Louisiana

Jose Morgadanes (May 22): Reported from New Orleans.

W. E. Hinds (June 10): Some of these cicadas were active in the northwest corner of the State about May 20. I noticed them in West Carroll Parish.

FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)

Maine — E. M. Patch (June 21): Infesting the northern part of our Maine forests. This report was received from Mr. Donald McLellan. Larvae nearly full fed.

New York — Fred N. Schott (June 14): Along with americana, this species appears to be unusually abundant this season at Long Island.

New Jersey — Fred N. Schott (June 14): Along with americana, this species appears to be unusually abundant this season in the northern half of this State.

SNOW-WHITE LINDEN MOTH (Ennomos subsignarius Hbn.)

Indiana — J. J. Davis (June 21): The snow-white linden moth is common on timber trees and other similar planted trees near timbered areas through the central part of the State, last of May and first of June. About the same area as 1923, but not as abundant or destructive judging from reports.

AN UMBER MOTH (Erannis tiliaria Harr.)

New York — C. R. Crosby (June 7): In Westchester County these worms are present in large numbers and are doing serious damage in perforating the foliage of several kinds of trees.

BOXELDER

BOXELDER APHID (Periphyllus negundinis Thos.)

Nebraska — M. H. Swenk (May 15-June 15): The cool backward nature of the spring has brought forth a very great abundance of aphids of many kinds. The boxelder aphid continued to be reported as very abundant on boxelder trees in central and southwestern Nebraska during the latter half of May.

CATALPA

CATALPA SPHINX (Ceratomia catalpae Edv.)

Mississippi — R. W. Harned (June 20): The catalpa sphinx has been reported as defoliating catalpa trees in the western half of the State.

ELM

ELM COCKSCOMB GALL (Colopha ulmicola Fitch)

Indiana — J. J. Davis (June 21): Received from several correspondents who report it abundant on young elms.

EUROPEAN ELM SCALE (Gossyparia spuria Modeer)

Kansas — H. B. Hungerford (June 16): Severe infestation of the European elm scale in parts of Wichita, especially on young elm trees.

Utah — Geo. F. Knowlton (May 27): European elm trees are, as a rule, attacked severely by the European elm scale and many young trees set out for shade are being killed by this insect. Some are spraying with kerosene emulsion.

A FLEA-BEETLE (Haltica ulmi Woods)

Connecticut — W. E. Britton (June 24): A large number of these green beetles were found at the base of a tree about June 1. We occasionally ran across this insect. Larvae caused about the same kind of injury as elm beetle.

LARCH

LARCH CASE-BEARER (Coleophora laricina Hbn.)

Connecticut — W. E. Britton (June 14): Reported as being very bad on native larch at Canaan (in swamps) and at Greenwich.

MAPLE

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Indiana — J. J. Davis (June 21): Again becoming conspicuous because of the cottony masses resulting from egg-laying. Apparently occurs generally over the northern half of the State as heretofore and probably as abundant. Has not yet begun to hatch.

Mississippi — R. W. Harned (June 20): The cottony maple scale seems to be more abundant in this State this year than for a number of years. The leaves and twigs of maple trees and other host plants are in many cases densely covered with these insects.

MAPLE MOTH (Synanthedon tepperi Edw.)

Mississippi — K. L. Cockerham (June 13): Mr. McLemore and I collected in Gulfport this spring a rare species of maple moth, which, according to Mr. F. H. Benjamin of Illinois, has been collected in only two other localities in the United States. This insect was inflicting the most severe injury to maple that I have ever seen on these trees.

SILVER-MAPLE LEAF-MITE (Phyllocoptes quadripes Shim.)

Ohio — H. A. Gossard (June 5): Received from Cleveland on maple on June 5, and from Cincinnati on June 8.

Nebraska — M. H. Swenk (June 15): Possibly in response to the same influences of the late spring, the maple bladder galls, produced by Phyllocoptes quadripes on maple, were more than usually in evidence.

OAK

LEAF-ROLLER (prob. Tortrix quercifoliana Fitch)

Connecticut — W.E. Britton (June 9): Medium sized trees partially and wholly stripped at Stamford. More abundant as compared with an average year.

PINE

PARALECHIA PINIFOLIELLA CHAMB.

Maine — E. M. Patch (June 23): Everywhere on the Island on Pinus rigida. Also on Pinus banksiana. This is the first time either Prof. Briscoe, Forester, or I, have seen this insect in Maine.

SOUTHERN PINE BEETLE (Dendroctonus frontalis Zimm.)

Georgia — L. W. Brown (June 3): Reported from Americus, attacking Himalayan pine.

WHITE-PINE WEEVIL (Pissodes strobi Peck)

New York — C. R. Crosby and assistants: Has been laying eggs for nearly two weeks and has done much damage in reforestation plantings in Chautauqua County.

PINE SCALE (Toumeyella pini King)

Nebraska — M. H. Swenk (May 15-June 15): An infestation of a large jack pine plantation in Holt County with the pine scale was found during the latter part of May. These scales are rapidly killing the trees.

SPRUCE

CHERMES SP.

Connecticut — W.E. Britton (June 13): Egg masses now abundant on leaves in New Haven. Very abundant as compared with an average year.

DILACHNUS PINICOLA KALT.

Ohio — H. A. Gossard (June 17): Received from Elmore on June 8, attacking Norway spruce.

PHYSOKERMES ABIETIS L.

Michigan — R. H. Pettit (June 19): Is so plentiful on our Norway spruces that the bees hovering over these trees in search of honeydew literally make the tree hum.

TULIP

TULIP SCALE (Toumeyella liriodendri Gmel.)

Mississippi — (June 23): Several tulip trees on the college campus with young growth heavily coated with partly developed scale insects of the tulip-tree soft scale.

MEALYBUGS (Pseudococcus sp.)

Connecticut — W. E. Britton (June 13): In the vicinity of Cobalt this insect seems to be attacking trees growing out of doors. Sent specimens to Mr. Harold Morrison.

INSECTS ATTACKING GREENHOUSE AND ORNAMENTAL PLANTS

MISCELLANEOUS FEEDERS

A ROACH (Pycnoscelus surinamensis L.)

Massachusetts — A. I. Bourne (June 24): A note of possible interest may be made of the finding of the roach Pycnoscelus surinamensis. It was found to be occurring in large numbers in greenhouses at Revere in the eastern part of the State. These roaches were very abundant in the soil of a rose house, and seemed to be doing considerable injury.

VARIEGATED CUTWORM (Lycophotia margaritosa Haw.)

Ohio — H. A. Gossard (June 20): The variegated cutworm was received from Smithville on June 16, where it was reported to be very numerous in a greenhouse and was feeding on lettuce.

GARDEN FLEA-HOPPER (Halticus citri Ashm.)

Ohio — H. A. Gossard (June 20): The garden flea-hopper was received from Berea, May 22, and reported to be severely attacking greenhouse cucumbers.

PLANT-LICE (Aphididae)

Missouri — L. Haseman (June 20): Spiraea, deutzias, and roses quite seriously infested. Also some trouble developing on garden crops and on fruit trees.

A FLEA-BEETLE (Haltica litigata Fall)

Mississippi — R. W. Harned (June 20): Leaf-beetles, probably Haltica litigata, have been reported as damaging cotton and crepe myrtle in Bolivar County, the latter part of May and the first of June. Various weeds and wild plants were also badly infested.

BARBERRY APHID (Liosomaphis berberidis Kalt.)

Utah — Geo. F. Knowlton (June 10): Very numerous on Berberis vulgaris on the campus of the Utah Agricultural College, often covering a good part of both upper and lower surfaces of the leaves.

CARNATION

RED SPIDERS (Tetranychus telarius L.)

Massachusetts — A. I. Bourne (June 24): I have received a report from Prof. Koon relative to finding red spiders in carnation houses in eastern Massachusetts. An estimate of the loss which they have already caused in that locality is placed at approximately 10 per cent.

CHRYSANTHEMUM

BLACK CHRYSANTHEMUM APHID (Microsiphoniella sanbornii Gill.)

Nebraska — M. H. Swenk (May 15-June 15): Ornamentals of various sorts have shown a widespread and heavy infestation, especially by this insect on chrysanthemums.

DELPHINIUM

Nebraska — M. H. Swenk (May 15-June 15): A new aphid for this State, determined tentatively as Aphis rociadae Ckll., was found on cultivated larkspur in Nemaha County during the last week of May.

EUONYMUS

MEALY FLATA (Ormenis pruinosa Say)

Mississippi — R. W. Harned (June 20): This fulgorid is now abundant at many places in the State on many different kinds of plants. It has been reported especially on euonymus from Gulfport and on privet from Hattiesburg.

HOLLYHOCKS

PAINTED LADY (Vanessa cardui L.)

Delaware — C. O. Houghton (June): Good sized larvae were found about the middle of June. These soon formed chrysalids and the adults emerged June 21-22. Chrysalids of this species are decidedly animated when disturbed and swing rapidly, like a pendulum, for some time.

RHODODENDRON

AZALEA BARK SCALE (Eriococcus azaleae Comst.)

Connecticut — W. E. Britton (June 24): Reported from Orange attacking rhododendron.

ROSE

A ROACH (Pycnoscelus surinamensis L.)

Connecticut — W. E. Britton (June 13): Reported as eating the tender bark from the young plants at Rowayton, in greenhouse roses.

FULLER'S ROSE BEETLE (Pantomorus fulleri Horn)

Georgia — L. F. Shaw (July 3): Reported as doing considerable damage at Cartersville.

ROSE SAWFLY (Caliroa aethiops Fab.)

Missouri — L. Haseman (June 20): Have just completed their usual work of foliage destruction where roses are not treated.

Kansas — J. W. McColloch (June 15): The rose slug has been abundant at Wilson, Allen, Jewell, and Manhattan, where severe defoliation has taken place.

ROSE SCALE (Aulacaspis rosae Bouché)

Georgia — V. C. Durham (May 20): Reported from Brunswick attacking rose.

ROSE APHID (Macrosiphum rosae L.)

Ohio — H. A. Gossard (June 3): Received from Lakeside on rose on this date.

Nebraska — M. H. Swenk (May 15-June 15): Ornamentals of various sorts have shown a widespread and heavy infestation, especially by this insect on rose.

SPIRAEA

SPIRAEA APHID (Aphis spireaella Schout.)

Indiana — J. J. Davis (June 21): Again very abundant on Spiraea vanhouttei at LaFayette.

Nebraska — M. H. Swenk (May 15-June 15): Ornamentals of various sorts have shown a widespread and heavy infestation, especially by this insect on bridal wreath.

SNOWBALL

SNOWBALL APHID (Anuraphis viburnicola Gill.)

Nebraska — M. H. Swenk (May 15-June 15): Ornamentals of various sorts have shown a widespread and heavy infestation, especially by this insect on snowball.

I N·S E C T S E F F E C T I N G M A N

A N D D O M E S T I C A N I M A L S

MAN

FLEAS (Siphonaptera)

South Carolina — J. A. Berly (June 16): We have had several requests within the past week in regard to the control of fleas. These reports come from different sections of the State.

Missouri — L. Haseman (June 20): Some complaints of fleas in barns, on lawns and in homes. Calcium cyanide is being used successfully for control of the pest.

CHIGGERS (Trombicula tlalzahuatl Murray)

Missouri — L. Haseman (June 20): This annoying pest is just beginning to make his presence felt.

Texas — O. G. Babcock (June 21): Never were so very numerous. More numerous during the first part of June than for the past four years. Suddenly ceased to minimum following a week of hot, dry weather at Sonora.

CATTLE

SCREWWORM (Chrysomya macellaria Fab.)

Texas — O. G. Babcock (May 31): This species is much later this year than normally. At the present time it is the most common species found in traps. Screwworm cases are few in numbers thus far. (June 21): At Sonora screwworm cases are less numerous to date than usual for this season of the year.

BLACK BLOW-FLY (Phormia regina Meig.)

New Mexico — O. G. Babcock (April 26-28): This appeared to be the only species of blow-fly observed about carcasses upon the range. Calliphora coloradensis Hough found in the Carlsbad caverns but not upon the carcasses on the range.

STABLE FLY (Stomoxys calcitrans L.)

Missouri — L. Haseman (June 20): Beginning to prove very serious on cattle.

HORN FLY (Haematobia irritans L.)

Missouri — L. Haseman (June 20): Beginning to prove very serious on cattle.

Texas — O. G. Babcock (June 21): During the forepart of June this pest has been quite numerous at Sonora, ranging from 200 to 700 flies in the worst cases.

POULTRY

POULTRY ROOST MITE (Dermanyssus gallinae Redi)

Texas — O. G. Babcock (May 31): For some reason this mite is and has been very scarce all spring in this section. Almost impossible to find it in the poultry houses at Sonora.

A CHIRONOMID (Forcipomyia specularis Coq.)

Indiana — J. J. Davis (June 21): A small chironomid fly was reported from Winamac on June 2 as quite annoying to poultry.

I N S E C T S I N N F E S T I N G H O U S E S A N D P R E M I S E S

ANTS (Formicidae)

Connecticut — W. E. Britton (June): Reported as being a nuisance in lawns, gardens, dwelling houses, etc., and even said to be girdling tomato plants. Very troublesome in the different parts of the State. More abundant as compared with an average year.

Indiana — J. J. Davis (June 21): Receiving many reports of ants in lawns from all parts of the State.

TERMITES (Reticulitermes flavipes Kol. et al.)

South Carolina — J. A. Berly (June 16): Three generations in Greenwood have been seriously injured by attacks of termites necessitating replacement of foundation timbers and flooring. Serious damage was done to the Methodist Church at Marion.

Indiana — J. J. Davis (June 21): Continue to have frequent reports of damage by these insects throughout the southern two-thirds of the State.

Alabama — J. M. Robinson (June 25): Recently we had an inquiry from Birmingham on how to control termites. They were attacking one of the aristocratic homes of that city.

Kansas — J. W. McColloch (June 17): The following reports have come in during the past month. Much of the woodwork in a house at Argonia damaged; the oak woodwork in a dining room of a residence at Manhattan undermined. A number of cherry trees at Manhattan and Cherryvale have been killed.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

Mississippi — M. R. Smith (June 17): Recent investigations of the results secured from the ant poisoning campaign conducted at Atta Bena during the fall of 1923 show a cost of 98.3 per cent. This means that 98.3 per cent of the housekeepers interviewed stated they had not seen or been troubled by any ants since poisoning. Only three small trails of the ants were noticed during the process of investigation.

R. W. Harned (June 20): In most of the towns where Argentine ant control campaigns were put on last year the control has been almost remarkable. In most cases practically 100 per cent of the houses have been entirely free of any ants. The results from the campaigns put on last year were apparently better than those put on during any previous year.

FIRE ANT (Solenopsis geminata Fab.)

Georgia — V. C. Durham (May 25): Said to be causing considerable annoyance about Savannah.

Mississippi — M. R. Smith (June 13): Workers of this species were observed infesting food in several houses in the locality of Columbus. (June 13): At A. & M. College males and females of this species were observed taking their nuptial flight on the afternoon of June 11.

CLOVER MITE (Bryobia praetiosa Koch)

Ohio — H. A. Gossard (June 20): Was received from Mt. Vernon on May 21, where it was overrunning brick walls and entering at the windows of a dwelling house.